

---

## Hardwood Veneered Doors

A RECORDED VOLUNTARY STANDARD OF THE TRADE

---

### COMMODITY STANDARDS

Simplified Practice Recommendations and Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Commodity Standards Division of the Office of Industry and Commerce, Bureau of Foreign and Domestic Commerce, and with the National Bureau of Standards.

The purpose of Simplified Practice Recommendations is to eliminate avoidable waste through the establishment of standards of practice for stock sizes and varieties of specific commodities that currently are in general production and demand. The purpose of Commercial Standards is to establish standard methods of test, rating, certification, and labeling of commodities, and to provide uniform bases for fair competition.

The adoption and use of a Simplified Practice Recommendation or a Commercial Standard is voluntary. However, when reference to a Commercial Standard is made in contracts, labels, invoices, or advertising literature, the provisions of the standard are enforceable through usual legal channels as a part of the sales contract.

A Simplified Practice Recommendation or a Commercial Standard originates with the proponent industry. The sponsors may be manufacturers, distributors, or users of the specific product. One of these three elements of industry submits to the Commodity Standards Division the necessary data to be used as the basis for developing a standard of practice. The Division, by means of assembled conferences or letter referenda, or both, assists the sponsor group in arriving at a tentative standard of practice and thereafter refers it to the other elements of the same industry for approval or for constructive criticism that will be helpful in making any necessary adjustments. The regular procedure of the Division assures continuous servicing of each effective Simplified Practice Recommendation and Commercial Standard, through review and revision, whenever, in the opinion of the industry, changing conditions warrant such action. Simplified Practice Recommendations and Commercial Standards are printed and made available by the Department of Commerce through the Government Printing Office and the Department of Commerce field offices.

---

**UNITED STATES DEPARTMENT OF COMMERCE**

**Charles Sawyer, Secretary**



**U. S. DEPARTMENT OF COMMERCE**  
**CHARLES SAWYER, Secretary**  
**BUREAU OF FOREIGN AND DOMESTIC**  
**COMMERCE**

**Office of Industry and Commerce**  
**H. B. McCoy, Director**

**IN COOPERATION WITH**  
**NATIONAL BUREAU OF STANDARDS**  
**E. U. CONDON, DIRECTOR**

# Hardwood Veneered Doors

[Effective December 1, 1950]

## 1. PURPOSE

1.1 The purpose of this commercial standard is to establish standard specifications and sizes for hardwood veneered doors for the guidance of producers, distributors, architects, builders, and the public; to provide a uniform basis for guaranteeing compliance through the use of labels or certifications; to avoid delays and misunderstandings; and to effect economies from the producer to the ultimate user through a wider utilization of standard hardwood veneered doors.

1.2 In the development of this standard every effort has been made to include designs that will permit freedom of architectural expression. Custom-made hardwood veneered doors will continue to be available for all types of architectural designing.

1.3 In keeping with the modern trend toward economy and simplification of installation, doors may be specified "prefit" to the exact size required. (See par. 3.7). Doors will be mortised for locks and cut for hinges when so specified.

## 2. SCOPE

2.1 This standard provides minimum specifications for panel and sash doors, solid-core flush doors, and hollow-core flush doors in four nominal thicknesses,  $\frac{3}{4}$ ,  $1\frac{1}{8}$ ,  $1\frac{1}{2}$ , and  $1\frac{3}{4}$  in. Standard stock layouts and designs are included for cupboard, exterior, French or casement, flush, interior, and toilet doors, and for side lights. The standard also covers construction, grades, sizes, tolerances, inspection, labeling, and nomenclature and definitions.

## 3. GENERAL REQUIREMENTS

3.1 All doors shall be well manufactured and shall meet the following requirements:

3.2 *Material*.—Doors shall be constructed of thoroughly seasoned wood redried by the manufacturer to a moisture content of 6 to 12 percent.

3.3 *Adhesives and bondage*.—Adhesives for all fabrication shall be of a water-resistant type (unless phenolic resin adhesive, or equal, is specified for face veneers and crossbanding), equally distributed over the surfaces, and applied under pressure.

3.4 *Sanding*.—Faces of all doors shall be smoothly machine sanded except that doors with face veneers  $\frac{1}{16}$  in. thick or less shall be smoothly belt sanded. This is not to be interpreted as meaning that the doors will be ready for painter's finish.

3.5 *Thicknesses*.—Doors shall be of the following thicknesses and a thickness tolerance of minus  $\frac{1}{16}$  in. shall be allowed, except that for  $\frac{3}{4}$ -in. cupboard doors a thickness tolerance of  $\frac{1}{32}$  in. shall be allowed:

Cupboard doors	.....	$\frac{3}{4}$ " and $1\frac{1}{8}$ "
Side lights	.....	$1\frac{3}{8}$ " and $1\frac{3}{4}$ "
Interior doors	.....	$1\frac{3}{8}$ " and $1\frac{3}{4}$ "
Exterior doors	.....	$1\frac{3}{8}$ " and $1\frac{3}{4}$ "
Toilet doors	.....	$1\frac{1}{8}$ "

3.6 *Size tolerance*.—Unless otherwise specified, a height and width tolerance of plus or minus  $\frac{1}{16}$  in. shall be allowed except when doors are ordered "prefit."

3.7 *Prefitting*.—When ordered "prefit," doors shall be supplied as follows:

- (a) All doors shall be prefit to  $\frac{3}{16}$  in. less in width and  $\frac{1}{8}$  in. less in height than the nominal door size, with a tolerance of  $\frac{1}{32}$  in., plus or minus, allowed.
- (b) All prefit doors shall have vertical edges slightly eased.
- (c) All prefit doors shall have skid blocks, scuff strips, or other type of protection attached to the bottom of the door.

## 4. GRADING

4.1 *Grade 1*.—The faces of all *Grade 1* doors shall be of the species of wood specified and equal to *Grade 1 (Good)* as defined in Commercial Standard 35-49, Hardwood Plywood, or later revision.

4.2 *Grade 1P*.—The faces of *Grade 1P* shall be of the species of wood specified and equal to *Grade 2* as defined in Commercial Standard 35-49, Hardwood Plywood, or later revision. This grade is suitable for a paint finish.

## 5. DETAIL REQUIREMENTS

### 5.1 PANEL AND SASH DOORS

5.1.1 *Construction*.—Panel and sash doors shall be assembled by what is known as "dowelled construction," that is, stiles and rails to be bored to receive dowels not less than  $\frac{1}{2}$  in. in diameter by approximately 5 in. long for doors  $1\frac{1}{2}$ ,  $1\frac{3}{8}$  and  $1\frac{3}{4}$  in. thick (except that narrow-stile doors may have shorter dowels). When  $\frac{1}{2}$ -in. dowels are used they shall be of hardwood. When  $\frac{5}{8}$ -in. diameter dowels are used they may be either of hardwood or softwood. Dowels shall have glue grooves, and/or indentations, and be sized for a drive fit. Dowels shall be set in a water-resistant adhesive and extend approximately one-half their length into each stile and rail, and shall be assembled under pressure. The minimum number of dowels at each end of rails shall be as follows:

Rails under $4\frac{1}{4}$ in. wide	.....	1 dowel.
Rails $4\frac{1}{4}$ to 7 in. wide	.....	2 dowels.
Rails over 7 in. wide	.....	3 dowels, plus 1 additional dowel for each additional full 3 in. in width.

5.1.2 *Cores*.—The cores for veneered stiles and rails shall be constructed of low-density wood blocks S2S, not more than  $2\frac{1}{2}$  in. wide, and of varying lengths, with end joints in adjacent rows staggered. (Low-density woods are those weighing not more than 2,300 pounds per 1,000 board feet when kiln-dried to a moisture content of 6 percent.

The use of sound, wormy chestnut shall, however, be permitted.) No core shall contain more than one species of wood. Core blocks shall be bonded together with water-resistant adhesive.

5.1.3 *Edge strips*.—The side edge strips of all doors shall be not less than  $\frac{1}{2}$  in. thick after trimming, and of a species of wood to match the face veneers. Top and bottom edge strips may be of any species of hardwood or softwood, not less than  $\frac{1}{2}$  in. thick after trimming.

5.1.4 *Sticking*.—Stiles and rails shall have solid sticking. An edge strip  $\frac{3}{4}$  in. thick before machining, of the same species of wood as the face veneers, shall be applied to the panel edges of all stiles and rails. All intersections shall be coped with joints well fitted. "Cove and bead" or "Ovolo A" sticking shall be standard on all hardwood veneered doors. (See fig. 1.) Imperfect sticking which may develop in machining shall be carefully repaired or neatly replaced. Panels are illustrated in figure 1.

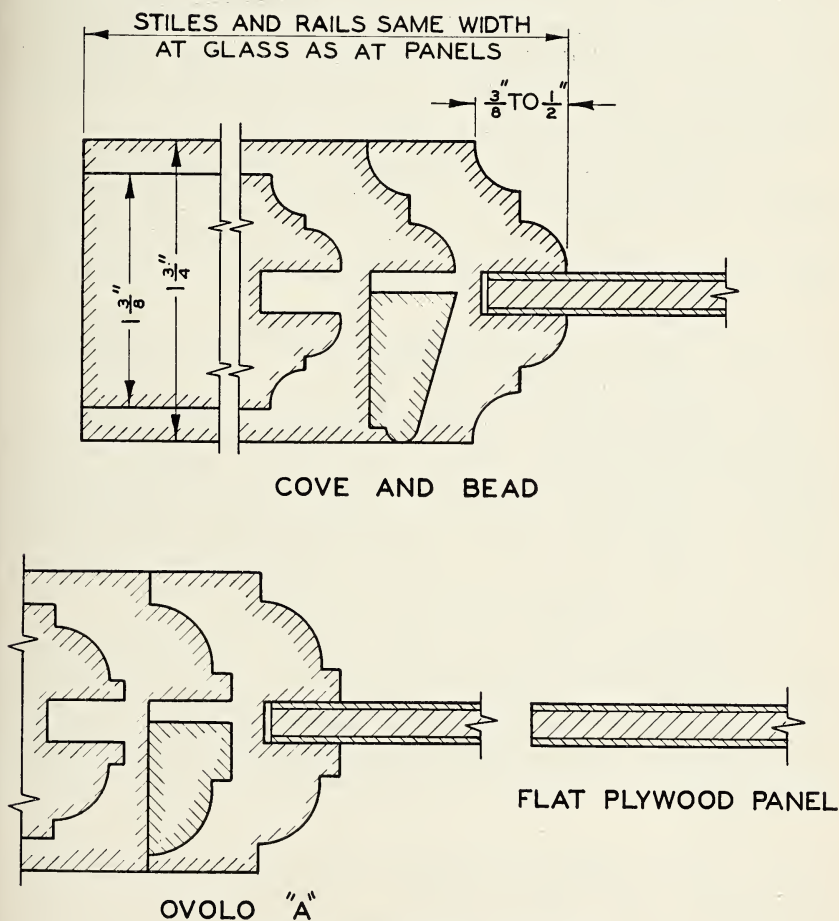


FIGURE 1. Sticking and panel details.



5.1.5 *Panels—flat hardwood plywood.*—The standard thickness of three-ply hardwood plywood panels shall be not less than  $\frac{1}{4}$  in. thick after sanding, with a tolerance of minus  $\frac{1}{32}$  in. allowed. They shall conform to *Grade 1 (Good)* for the species of wood specified, as defined in Commercial Standard 35-49, or later revision.

5.1.6 *Glass stops and muntins.*—Glass stops and muntins shall be furnished in the same species of wood as is used for the face veneer.

5.1.7 *Face veneers.*—Face veneers for stiles and rails shall be of the species of wood specified,  $\frac{1}{8}$  in. thick before sanding.

5.1.8 *Measurements.*—See paragraph 6.2.

## 5.2 SOLID-WOOD-CORE FLUSH VENEERED DOORS

5.2.1 *Core—general.*—The core shall be constructed of wood blocks, or a combination of wood strips and blocks, or a combination of wood strips. The wood blocks or strips shall be surfaced two sides, not more than 3 in. wide, and be of a low-density wood. (Low-density woods are those weighing not more than 2,300 pounds per 1,000 board feet when kiln-dried to a moisture content of 6 percent. The use of sound, wormy chestnut shall, however, be permitted.) No core shall contain more than one species of wood.

5.2.1.1 *Bonded core.*—The wood blocks or strips shall be bonded together with a water-resistant adhesive, with the end joints in adjacent rows staggered. After bonding, the cores shall be planed or sanded to a smooth, uniform thickness. Doors with vertical block cores shall have the blocks laid up with the grain running parallel and vertically.

5.2.1.2 *Floating core.*—Floating core block construction shall consist of vertical blocks or strips interspaced within a stile-and-rail frame and one or more intermediate rails.

5.2.1.3 *Bonded stile and rail core.*—Stile and rail cores shall be constructed with stile, rail, and panel units, each unit made up entirely of blocks bonded together with a water-resistant adhesive. In the stile and rail units, the blocks shall be laid up with the grain running parallel and in the direction of the longitudinal dimension of the stile or rail. In the panel units the blocks shall be laid with the grain running parallel and vertically when the core is to be crossbanded, and parallel and horizontally when no crossbanding is to be used.

5.2.2 *Edge strips* shall be the same as specified in paragraph 5.1.3, with the added provision that in lieu of  $\frac{1}{2}$ -in. top and bottom edge strips, the top and bottom of the door shall be given two coats of paint or varnish before it leaves the factory. At the option of the manufacturer, flush veneered doors may be constructed of stile, rail, and panel units, each unit made up entirely of blocks with  $\frac{1}{2}$ -in. edge strips on the exposed edges of the stiles and rails, but not on the ends of the stiles.

5.2.3 *Face veneers and crossbanding.*—On  $1\frac{1}{8}$ -in. and  $1\frac{1}{4}$ -in. doors, the face veneers shall be of standard commercial thickness, but not less than  $\frac{1}{8}$  in. thick before sanding. The crossbanding for a five-ply door shall be not less than  $\frac{1}{16}$  in. thick when dried, and of any suitable hardwood species such as maple, birch, gum, ash, elm, basswood, or yellow poplar, at the option of the manufacturer. The combined thickness of veneers that are applied to each side of the core of a seven-ply door shall be not less than  $\frac{1}{8}$  in. thick before sanding.

5.2.3.1 When no crossbanding is used the core shall be of stile and rail construction and the face shall be at least  $\frac{3}{16}$  in. thick before sanding.

5.2.4 *Cupboard doors*.—The edge strips, with regard to size and species, shall be optional with the manufacturer. Top and bottom edge strips may be omitted, in which case exposed ends need not be painted. Face veneers shall be of standard commercial thickness, but not less than  $\frac{1}{32}$  in. thick before sanding. The crossbanding shall be of any suitable hardwood not less than  $\frac{1}{20}$  in. thick when dried.

### 5.3 HOLLOW-CORE FLUSH VENEERED DOORS

5.3.1 *Cores*.—The type of hollow-core construction shall be optional with the manufacturer, provided that the inner structure of the core shall be such that it will sufficiently support the outer plywood and afford strength and stability sufficient for normal usage.

5.3.2 *Edge strips*.—If edge strip is provided on stiles, the minimum width of the edge strip shall be  $\frac{1}{2}$  in. after trimming. But when so provided, the minimum width of the stiles may be reduced so that the combined width of stile and edge strip shall be not less than  $1\frac{1}{8}$  in.

5.3.3 *Stiles and rails*.—The minimum width of stiles of hollow-core doors shall be  $1\frac{1}{8}$  in. (See also par. 5.3.2.) The minimum width of rails shall be  $2\frac{3}{4}$  in.

5.3.4 *Lock block*.—The minimum length of lock block shall be 20 in. The minimum combined width of lock block and its adjacent stile shall be 4 in.

5.3.5 *Veneers*.—Veneers for crossbanding and faces shall be plywood of two or more plies, with a combined minimum thickness of  $\frac{1}{8}$  in. before sanding; face veneers shall be of standard commercial thickness, but not less than  $\frac{1}{32}$  in. before sanding. The faces of all *Grade 1* hollow-core doors shall be equal to *Grade 1 (Good)* for the species of wood specified and as defined in Commercial Standard 35-49, Hardwood Plywood, or later revision. The faces of all *Grade 1P* hollow-core doors shall be equal to *Grade 2* as defined in Commercial Standard 35-49, or later revision.

## 6. SIZES, DESIGNS, AND LAYOUTS

6.1 Table 1 lists the standard sizes for the various kinds of doors.

6.2 Measurements for stiles, rails, mullions, and muntins given in the layouts herein are over-all (face measurement plus the sticking). A tolerance of  $\frac{1}{8}$  in. in width shall be permitted. Unless otherwise specified, glass measurements may vary not more than  $\frac{1}{4}$  in. from those shown in the layouts. (These tolerances allow for variations in practice of the different manufacturers.)

TABLE 1. *Standard sizes*

INTERIOR PANEL DOORS	EXTERIOR DOORS
<p><i>A, B, D, F, G, I, L, M, S</i></p> <p>1' 6" x 6' 6"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        2' 0" x 6' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          6' 6"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        2' 4" x 6' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          6' 6"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        2' 6" x 6' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          6' 6"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        2' 8" x 6' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          6' 6"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        3' 0" x 6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        3' 4" x 6' 8"    1<math>\frac{3}{4}</math>" only                          7' 0"    1<math>\frac{3}{4}</math>" only</p>	<p><i>A'-A'—One-light doors only</i></p> <p>5<math>\frac{1}{2}</math>" stiles, 6<math>\frac{1}{2}</math>" top rails, 18<math>\frac{1}{2}</math>" bottom rails</p> <p>2' 8" x 6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        3' 0" x 6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 6"    1<math>\frac{3}{4}</math>" only        3' 4" x 6' 8"    1<math>\frac{3}{4}</math>" only                          7' 0"    1<math>\frac{3}{4}</math>" only                          7' 6"    1<math>\frac{3}{4}</math>" only                          8' 0"    1<math>\frac{3}{4}</math>" only</p> <p>Doors 3' 4" wide have 6<math>\frac{1}{2}</math>" stiles.</p>
<p>INTERIOR DOORS</p> <p><i>A-A—One-light doors only</i></p> <p>1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"</p> <p>2' 0" x 6' 6"    2' 6" x 6' 6"                          6' 8"    6' 8"                          7' 0"    7' 0"        2' 4" x 6' 6"    2' 8" x 6' 8"                          6' 8"    7' 0"                          7' 0"    3' 0" x 6' 8"                                  7' 0"</p>	<p>EXTERIOR FRENCH OR CASEMENT DOORS</p> <p><i>A'-A'—Divided-light doors</i></p> <p>5<math>\frac{1}{2}</math>" stiles, 6<math>\frac{1}{2}</math>" top rails, 18<math>\frac{1}{2}</math>" bottom rails</p> <p>2' 8" x 6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        3' 0" x 6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"</p>
<p>INTERIOR FRENCH OR CASEMENT DOORS</p> <p><i>A-A—Divided-light doors</i></p> <p>1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"</p> <p>2' 0" x 6' 6"    2' 6" x 6' 6"                          6' 8"    6' 8"                          7' 0"    7' 0"        2' 4" x 6' 6"    2' 8" x 6' 8"                          6' 8"    7' 0"                          7' 0"    3' 0" x 6' 8"                                  7' 0"</p>	<p>SIDE LIGHTS</p> <p><i>X-X and Y-Y</i></p> <p>1' 0" x 6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        1' 2" x 6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"</p>
<p>EXTERIOR DOORS</p> <p><i>B-B, E-E, F-F, J-J, K-K, L-L</i></p> <p>2' 8" x 6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        3' 0" x 6' 8"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"                          7' 0"    1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"        3' 4" x 6' 8"    1<math>\frac{3}{4}</math>" only                          7' 0"    1<math>\frac{3}{4}</math>" only</p>	<p>EXTERIOR FLUSH DOORS</p> <p><i>Plain flush or "V" grooved—solid core</i></p> <p>1<math>\frac{3}{4}</math>"</p> <p>3' 0" x 6' 8"    3' 4" x 6' 8"                          7' 0"    7' 0"</p> <p>INTERIOR FLUSH DOORS</p> <p><i>Plain—solid core or hollow core</i></p> <p>1<math>\frac{3}{8}</math>" and 1<math>\frac{3}{4}</math>"</p> <p>1' 6" x 6' 6"    2' 4" x 6' 0"    2' 8" x 6' 0"                          6' 8"    6' 6"    6' 6"        2' 0" x 6' 0"    6' 8"    6' 8"                          6' 6"    7' 0"    7' 0"                          6' 8"    2' 6" x 6' 0"    3' 0" x 6' 8"                          7' 0"    6' 6"    7' 0"                                  6' 8"    3' 4" x 6' 8"                                  7' 0"    7' 0"</p>



TABLE 1. *Standard sizes—Continued*

FLUSH TOILET DOORS			FLUSH CUPBOARD DOORS		
1½"			¾" and 1½"		
1' 6" x 4' 0"	2' 0" x 5' 0"	2' 6" x 4' 0"	1' 0" x 1' 6"	1' 4" x 1' 6"	1' 8" x 2' 0"
4' 6"	5' 6"	4' 6"	2' 0"	2' 0"	2' 6"
5' 0"	2' 4" x 4' 0"	5' 0"	2' 6"	2' 6"	3' 0"
5' 6"	4' 6"	5' 6"	3' 0"	3' 0"	3' 6"
2' 0" x 4' 0"	5' 0"		3' 6"	3' 6"	4' 0"
4' 6"	5' 6"		4' 0"	4' 0"	4' 6"
			4' 6"	4' 6"	5' 0"
			5' 0"	5' 0"	
When so specified, flush toilet doors can be furnished 1⅝" thick.			1' 2" x 1' 6"	1' 6" x 1' 6"	2' 0" x 2' 0"
			2' 0"	2' 0"	2' 6"
			2' 6"	2' 6"	3' 0"
			3' 0"	3' 0"	3' 6"
			3' 6"	3' 6"	4' 0"
			4' 0"	4' 0"	4' 6"
			4' 6"	4' 6"	5' 0"
			5' 0"	5' 0"	5' 6"
			5' 6"	5' 6"	

## INTERIOR DOORS

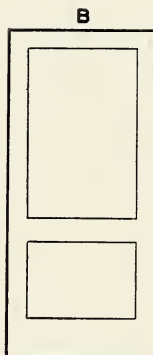


ONE PANEL

Stiles and top rail ..... 4¾"  
 Bottom rail ..... 3⅝"

3-ply plywood flat panel. Sticking: Standard.

Can also be furnished with 5½" stiles and top rail, 12" bottom rail.



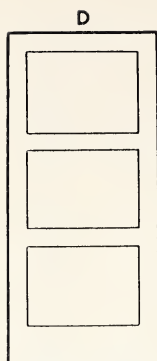
TWO PANEL

Stiles and top rail ..... 4¾"  
 Lock rail ..... 8"  
 Bottom rail ..... 9⅝"

3-ply plywood flat panels. Sticking: Standard.

See table 1, page 8, for sizes available.

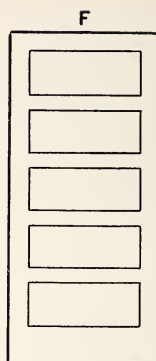
# INTERIOR DOORS—Continued



**THREE PANEL**

Stiles and top rail.....	4 $\frac{3}{4}$ "
Cross rails.....	4 $\frac{5}{8}$ "
Bottom rail.....	9 $\frac{5}{8}$ "

3-ply plywood flat panels. Sticking: Standard.



**FIVE CROSS PANEL**

Stiles and top rail.....	4 $\frac{3}{4}$ "
Intermediate rails.....	4 $\frac{5}{8}$ "
Bottom rail.....	9 $\frac{5}{8}$ "

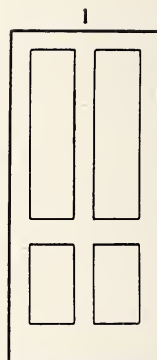
3-ply plywood flat panels. Sticking: Standard.



**TWO VERTICAL PANEL**

Stiles and top rail.....	4 $\frac{3}{4}$ "
Bottom rail.....	9 $\frac{5}{8}$ "
Vertical mullion.....	4 $\frac{5}{8}$ "

3-ply plywood flat panels. Sticking: Standard.



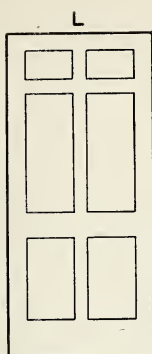
**FOUR PANEL**

Stiles and top rail.....	4 $\frac{3}{4}$ "
Lock rail.....	8"
Muntins.....	4 $\frac{5}{8}$ "
Bottom rail.....	9 $\frac{5}{8}$ "

3-ply plywood flat panels. Sticking: Standard.

See table 1, page 8, for sizes available.

# INTERIOR DOORS—Continued

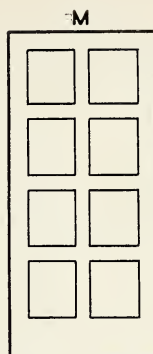


**SIX PANEL COLONIAL**

Stiles and top rail.....	4 $\frac{3}{4}$ "
Lock rail.....	8"
Intermediate rails and mullions.....	3 $\frac{7}{8}$ "
Bottom rail.....	9 $\frac{5}{8}$ "
Height of top panels over-all.....	7 $\frac{1}{8}$ "

3-ply plywood flat panels. Sticking: Standard.

Doors 1'6" are made one panel wide.



**EIGHT PANEL**

Stiles and top rail.....	4 $\frac{3}{4}$ "
Intermediate rails and mullions.....	3 $\frac{7}{8}$ "
Bottom rail.....	9 $\frac{5}{8}$ "

3-ply plywood flat panels. Sticking: Standard.

Doors 1'6" are made one panel wide.



**INNER FRAME**

Stiles and top rail.....	4 $\frac{1}{4}$ " face
Bottom rail.....	9 $\frac{1}{4}$ " or 9 $\frac{1}{2}$ " face

3-ply plywood flat panel. Sticking: Standard.



**ONE LIGHT**

Stiles and top rail.....	4 $\frac{3}{4}$ "
Bottom rail.....	9 $\frac{5}{8}$ "

Sticking: Standard.

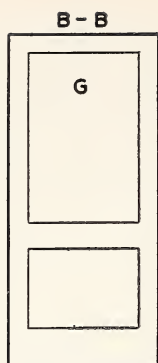
Size of door	Size of glass
2' 0" x 6' 8".....	15 $\frac{1}{2}$ " x 66 $\frac{1}{2}$ "
2' 6" x 6' 8".....	21 $\frac{1}{2}$ " x 66 $\frac{1}{2}$ "
2' 8" x 6' 8".....	23 $\frac{1}{2}$ " x 66 $\frac{1}{2}$ "
3' 0" x 6' 8".....	27 $\frac{1}{4}$ " x 66 $\frac{1}{2}$ "

Beads for glass included.

Can also be furnished with 5 $\frac{1}{2}$ " stiles and 18 $\frac{1}{2}$ " bottom rail. (See design A'-A', page 13, exterior doors.) When so specified, doors with light openings will be divided according to purchaser's specifications.

See table 1, page 8, for sizes available.

# EXTERIOR DOORS



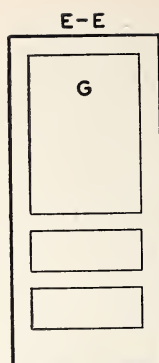
Stiles and top rail	43 <sup>3</sup> / <sub>4</sub> "
Lock rail	8"
Bottom rail	9 <sup>3</sup> / <sub>4</sub> "

Sticking: Standard.

Size of door	Size of glass
2' 8" x 6' 8"	23 <sup>1</sup> / <sub>2</sub> " x 40"
3' 0" x 6' 8"	27 <sup>1</sup> / <sub>2</sub> " x 40"
3' 0" x 7' 0"	27 <sup>1</sup> / <sub>2</sub> " x 44"

Beads for glass included.

When so specified, doors with light openings will be divided according to purchaser's specifications.

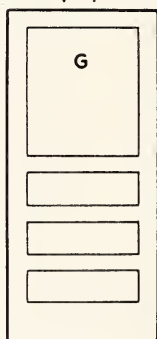


Stiles and top rail	43 <sup>3</sup> / <sub>4</sub> "
Lock rail	8"
Intermediate rail	4 <sup>5</sup> / <sub>8</sub> "
Bottom rail	9 <sup>3</sup> / <sub>8</sub> "

3-ply plywood flat panels. Sticking: Standard.

Size of door	Size of glass
2' 8" x 6' 8"	23 <sup>1</sup> / <sub>2</sub> " x 36"
3' 0" x 6' 8"	27 <sup>1</sup> / <sub>2</sub> " x 36"
3' 0" x 7' 0"	27 <sup>1</sup> / <sub>2</sub> " x 40"

F-F



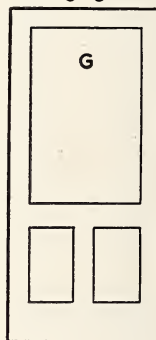
Stiles and top rail	43 <sup>3</sup> / <sub>4</sub> "
Cross rails	4 <sup>5</sup> / <sub>8</sub> "
Bottom rail	9 <sup>3</sup> / <sub>8</sub> "

3-ply plywood flat panels. Sticking: Standard.

Size of door	Size of glass
2' 8" x 6' 8"	23 <sup>1</sup> / <sub>2</sub> " x 30"
3' 0" x 6' 8"	27 <sup>1</sup> / <sub>2</sub> " x 30"
3' 0" x 7' 0"	27 <sup>1</sup> / <sub>2</sub> " x 34"

Beads for glass included.

J-J



Stiles and top rail	43 <sup>3</sup> / <sub>4</sub> "
Lock rail	8"
Muntins	4 <sup>5</sup> / <sub>8</sub> "
Bottom rail	9 <sup>3</sup> / <sub>8</sub> "

3-ply plywood flat panels. Sticking: Standard.

Size of door	Size of glass
2' 8" x 6' 8"	23 <sup>1</sup> / <sub>2</sub> " x 40"
3' 0" x 6' 8"	27 <sup>1</sup> / <sub>2</sub> " x 40"
3' 0" x 7' 0"	27 <sup>1</sup> / <sub>2</sub> " x 44"

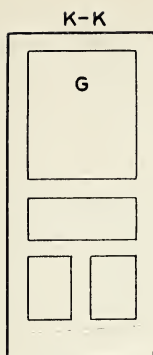
Beads for glass included.

When so specified, doors with light openings will be divided according to purchaser's specifications.

See table 1, page 8, for sizes available.



# EXTERIOR DOORS—Continued



Stiles and top rail	43 $\frac{1}{4}$ "
Cross rails	4 $\frac{5}{8}$ "
Muntins	4 $\frac{5}{8}$ "
Bottom rail	9 $\frac{5}{8}$ "

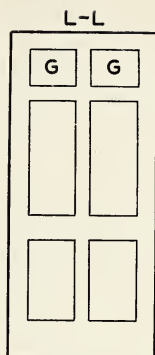
3-ply plywood flat panels. Sticking: Standard.

Size of door	Size of glass
2' 8" x 6' 8"	23 $\frac{1}{2}$ " x 34"
3' 0" x 6' 8"	27 $\frac{1}{2}$ " x 34"
3' 0" x 7' 0"	27 $\frac{1}{2}$ " x 38"

Beads for glass included.

Also supplied with 5 $\frac{1}{2}$ " stiles and top rail, 5 $\frac{3}{8}$ " cross rails and muntins, when so specified. Top panel made two panels wide when so specified.

When so specified, doors with light openings will be divided according to purchaser's specifications.

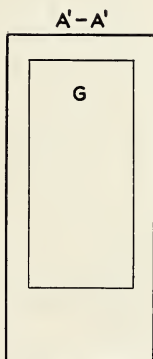


Stiles and top rail	43 $\frac{1}{4}$ "
Lock rail	8"
Top cross rail and mullions	31 $\frac{1}{8}$ "
Bottom rail	9 $\frac{5}{8}$ "

3-ply plywood flat panels. Sticking: Standard.

Size of door	Size of glass
2' 8" x 6' 8"	9 $\frac{1}{2}$ " x 71 $\frac{1}{8}$ "
3' 0" x 6' 8"	11 $\frac{1}{2}$ " x 71 $\frac{1}{8}$ "
3' 0" x 7' 0"	11 $\frac{1}{2}$ " x 71 $\frac{1}{8}$ "

Beads for glass included.



Stiles	5 $\frac{1}{2}$ "
Top rail	6 $\frac{1}{2}$ "
Bottom rail	18 $\frac{1}{2}$ "

Size of door	Size of glass
2' 8" x 6' 8"	22" x 56"
3' 0" x 6' 8"	26" x 56"
3' 0" x 7' 0"	26" x 60"
3' 4" x 6' 8"	28" x 56"
3' 4" x 7' 0"	28" x 60"

Doors 3' 4" wide have 6 $\frac{1}{2}$ " stiles.

Beads for glass included.

This door can also be furnished with divided lights.

See table 1, page 8, for sizes available.

## SIDE LIGHTS



Stiles.....  $2\frac{1}{2}"$   
 Top rail.....  $6\frac{1}{2}"$   
 Bottom rail.....  $18\frac{1}{2}"$



Stiles.....  $2\frac{1}{2}"$   
 Top rail.....  $5\frac{1}{2}"$   
 Lock rail.....  $8"$   
 Bottom rail.....  $9\frac{3}{8}"$

Beads for glass included.

Top and bottom rails made same width as that in doors with which they are used. Sticking: Standard.

When so specified, side lights will be divided according to purchaser's specifications.

## FLUSH DOORS



**PLAIN FLUSH**  
SOLID OR HOLLOW CORE



**FLUSH "V" GROOVED**  
SOLID CORE

Light openings may be cut in these doors to suit the wishes of the purchaser.

See table 1, pages 8 and 9, for sizes available.

## 7. INSPECTION

7.1 All hardwood veneered doors sold as conforming to this commercial standard are subject to inspection in the condition received, and complaints regarding any shipment shall be made within 10 days after receipt thereof. Any rejected doors shall be held, properly protected, for a period of 30 days after notice of rejection and pending adjustment.

## 8. LABELING

8.1 In order to assure the purchaser that he is getting hardwood veneered doors of the quality specified, producers may individually, or in concert with their trade associations, grade-mark each door by stamp, brand, or label as conforming to this standard. The following wording is recommended for the label:

This GRADE ---- hardwood veneered door complies with all requirements of Commercial Standard CS171-50, as developed by the trade under the procedure of the Commodity Standards Division, and issued by the U. S. Department of Commerce.

-----  
(Name of manufacturer)

### 8.2 *Grade marking.*

8.2.1 The following grade-marks have been adopted by the National Woodwork Manufacturers Association, Inc., as a means of assuring consumers and distributors that hardwood veneered doors conform to the high standards of quality defined herein.

(a) For hardwood veneered doors of Grade 1:

**[ HARDWOOD  
GRADE 1 NWMA  
000  
VENEERED ]**

(b) For hardwood veneered doors of Grade 1P:

**[ HARDWOOD  
GRADE 1P NWMA  
000  
VENEERED ]**

## 9. NOMENCLATURE AND DEFINITIONS

9.1 The definitions below give the meaning of the various terms used in this standard:

*Bars*.—Wood divisions separating lights of glass.

*Coped*.—The ends of rails, mullions, muntins, or bars so shaped that they will cover and fit the contour of the sticking.

*Core*.—The innermost layer in veneered door construction.

*Solid core*.—A core of solid wood blocks or strips.

*Hollow core*.—A core assembly of strips or other units of wood, or of other rigid material which supports the outer layers, with intervening hollow cells or spaces.

*Crossbanding*.—The veneer used in the construction of flush doors, which is placed between the core and face veneers with the direction of the grain at right angles to that of the face veneer.

*Doors*:

*Flush door*.—Made up of a core, crossbanding, and flat face veneers, or core and flat face veneers only.

*Five-ply flush door* has two plies of veneer on each side of a solid core.

*Seven-ply flush door* has three plies of veneer on each side of a solid core.

*Panel door*.—Made up of stiles, rails, and one or more panels, the stiles and rails forming the frame around the panel.

*Sash door*.—Same as panel door, except that one or more panels are replaced by glass.

*Kiln-dried*.—Dried in a closed chamber in which the removal of moisture is controlled by artificial heat and usually by relative humidity.

*Mullion*.—An upright, or vertical, bar in a door.

*Muntin*.—Any short or light bar, either vertical or horizontal, in a door between glass or panels, and not extending the full width or length of the door.

*Plywood panel*.—A panel made up of core and face veneer.

*Rails*.—The cross, or horizontal, pieces of the framework of a door.

*Bottom rail*.—The bottom cross, or horizontal, piece of a door.

*Lock rail*.—The wide cross, or horizontal, rail of a door at lock height.

*Top rail*.—The top cross, or horizontal, piece of a door.

*Sticking*.—A mold that is worked on the edges of stiles, rails, mullions, muntins, or bars, adjacent to panels or glass.

*Stiles*.—The upright, or vertical, outside pieces of a door.

*Veneered door*.—Made up of core and face veneers (may include crossbanding in flush doors).

## 10. EFFECTIVE DATE

10.1 Having been passed through the regular procedure of the Commodity Standards Division, and approved by the acceptors hereinafter listed, this commercial standard was issued by the United States Department of Commerce, effective from December 1, 1950.

EDWIN W. ELY,  
Chief, Commodity Standards Division.



## HISTORY OF PROJECT

On September 30, 1949, the National Woodwork Manufacturers Association requested the cooperation of the Commodity Standards Division in the establishment of a commercial standard for hardwood veneered doors. A draft of the proposed standard was submitted on January 3, 1950, to manufacturers, and to a number of technical, distributor, and consumer organizations for advance review and comment. All comments were carefully considered and the draft adjusted to represent the composite views of all interested groups. The recommended commercial standard was circulated on May 17, 1950, to the trade for further consideration and written acceptance. Comments received from a number of manufacturers indicated that a few additional changes should be made to improve and strengthen the commercial standard in the best interests of all concerned. These modifications were referred on September 7, 1950, to all acceptors of record. Upon receipt of official acceptances estimated to represent a satisfactory majority of the production by volume, and in the absence of active valid opposition, the standard was promulgated on November 1, 1950, as Commercial Standard 171-50, to become effective for new production on December 1, 1950.

Project Manager: J. W. Medley, Commodity Standards Division, Office of Industry and Commerce.

Technical Adviser: V. B. Phelan, Building Technology Division, National Bureau of Standards.

## STANDING COMMITTEE

The following individuals comprise the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Comment concerning the standard and suggestions for revision may be addressed to any member of the committee or to the Commodity Standards Division, Office of Industry and Commerce, U. S. Department of Commerce, which acts as secretary for the committee.

A. C. HAMMERAND, Farley & Loetscher Manufacturing Co., Dubuque, Iowa (chairman).

OSCAR WITT, Roddis Plywood Corp., Marshfield, Wis.

D. C. MCCRAY, Paine Lumber Co., Oshkosh, Wis.

C. K. PAINE, Curtis Cos., Inc., Clinton, Iowa.

CARL G. HORN, Iroquois Millwork Corp., P. O. Box 391, Albany 1, N. Y. (representing Woodwork Jobbers Service Bureau).

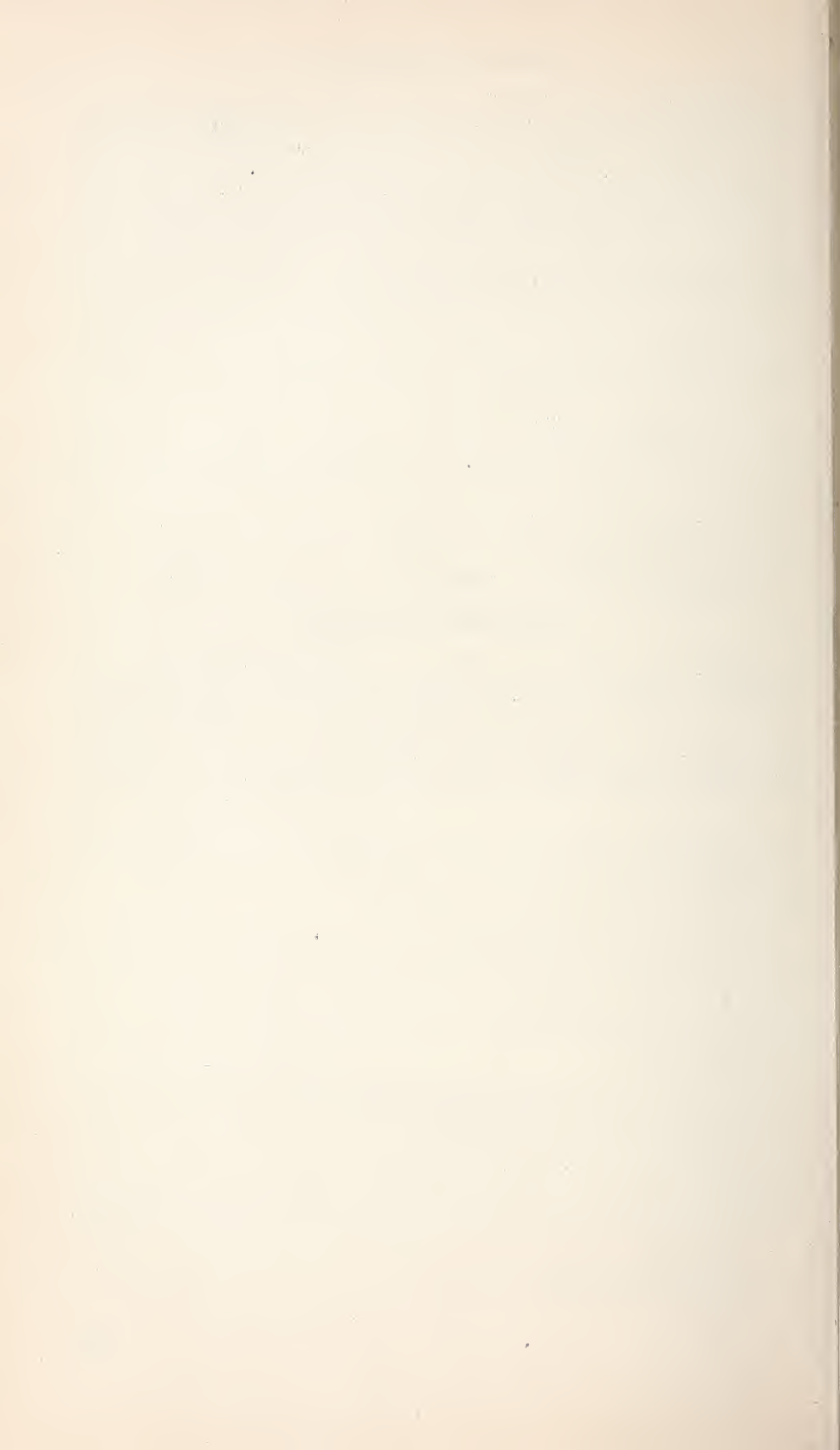
ROY H. BUELL, Buell & Co., P. O. Box 268, Dallas, Tex. (representing Southern Sash & Door Jobbers Assn.).

HARRY H. STEIDLE, Prefabricated Home Manufacturers' Institute, 908 Twentieth Street NW., Washington 6, D. C.

LESTER T. BURN, Bureau of Indian Affairs, U. S. Department of the Interior, Washington 25, D. C.

B. H. ARMIGER, F. H. Martin Construction Co., 955 East Jefferson Avenue, Detroit, Mich. (representing Associated General Contractors of America, Inc.).

EDWIN T. McCOWAN, 910 Title Guarantee Building, Birmingham 3, Ala. (representing American Institute of Architects).



**ACCEPTANCE OF COMMERCIAL STANDARD**

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this commercial standard.

Date\_\_\_\_\_

Commodity Standards Division,  
Office of Industry and Commerce,  
U. S. Department of Commerce,  
Washington 25, D. C.

Gentlemen:

We believe that the Commercial Standard 171-50 constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

production <sup>1</sup>                      distribution <sup>1</sup>                      purchase <sup>1</sup>                      testing <sup>1</sup>  
of hardwood veneered doors.

We reserve the right to depart from it as we deem advisable.

We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labeled as conforming thereto.

Signature of authorized officer\_\_\_\_\_

(In ink)

(Kindly typewrite or print the following lines)

Name and title of above officer\_\_\_\_\_

Organization\_\_\_\_\_

(Fill in exactly as it should be listed)

Street address\_\_\_\_\_

City, zone, and State\_\_\_\_\_

<sup>1</sup> Underscore which one. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade associations, trade papers, etc., desiring to record their general support, the words "General support" should be added after the signature.

## TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

2. *The acceptor's responsibility.*—The purpose of commercial standards is to establish, for specific commodities, nationally recognized grades or consumer criteria, and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard, where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nation-wide basis is fourfold: first, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or of the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.



## ACCEPTORS

The organizations listed below have individually accepted this standard for use as far as practicable in the production, distribution, or purchase of hardwood veneered doors. In accepting the standard, they reserved the right to depart therefrom as they individually deem advisable. It is expected that doors which actually comply with the requirements of this standard in all respects will be regularly identified or labeled as conforming thereto, and that purchasers will require such specific evidence of conformity.

### ASSOCIATIONS

(General Support)

American Specification Institute, Chicago, Ill.  
American Wood Institute, New York, N. Y.  
Associated General Contractors of America, Inc., Washington, D. C.  
Carolina Lumber & Building Supply Association, Charlotte, N. C.  
Fir Door Institute, Tacoma, Wash.  
Greater New York Lumber Industries, Inc., New York, N. Y.  
Michigan Association of Traveling Lumber, Sash & Door Salesmen, The, Detroit, Mich.  
Michigan Retail Lumber Dealers Association, Lansing, Mich.  
Mississippi Retail Lumber Dealers Association, Inc., Jackson, Miss.  
National Hardwood Lumber Association, Chicago, Ill.  
National Woodwork Manufacturers Association, Chicago, Ill.  
Prefabricated Home Manufacturers' Institute, Washington, D. C.  
Southern Plywood Manufacturers Association, Atlanta, Ga.

### FIRMS AND OTHER INTERESTS

Adams, Franklin O., Tampa, Fla.  
Adams-Rogers Co., Indianapolis, Ind.  
Algoma Plywood & Veneer Co., Algoma, Wis.  
American Plywood Corp., New London, Wis.  
American Sash & Door Co., Kansas City, Mo.  
Andrews, C. E., Lumber Co., New Bethlehem, Pa.  
Andrews, Jones, Biscoe & Goodell, Boston, Mass.  
Anson & Gilkey Co., Merrill, Wis.  
Associated Door & Plywood Co., Chicago, Ill.  
Athens Flooring Co., Athens, Ohio.  
Barthmaier, Eugene V., Philadelphia, Pa.  
Baxter, C. B., & Co., Kansas City, Mo.  
Beasley & Sons Co., Nashville, Tenn.  
Belli, Edo J., Chicago, Ill. (General support.)  
Binswanger & Co., Inc., Richmond, Va.  
Blomberg, Karl E., Brooklyn, N. Y. (General support.)  
Bohnhoff Lumber Co., Inc., Los Angeles, Calif.  
Bosman & Casson, Inc., Harrison, N. J.  
Brown-Graves Co., Akron, Ohio.  
Brust & Brust, Milwaukee, Wis.  
Buckley, F. S., Door Co., San Francisco, Calif.  
Buell & Co., Dallas, Tex.  
Buellen Manufacturing Co. (of Tacoma, Wash.), Fort Worth, Tex.  
Burritt, A. W., Co., Bridgeport, Conn.  
California Door Company of Los Angeles, The, Los Angeles, Calif.  
Cameron Lumber Co., Inc., Newburgh, N. Y.  
Cameron, Wm., & Co., Waco, Tex.  
Camlet, J. Thomas, Passaic, N. J.  
Cannon & Mullen, Salt Lake City, Utah.  
Carr, Adams & Collier Co., Dubuque, Iowa.  
Cellar Lumber Co., Westerville, Ohio.  
Cellarius, Charles F., Cincinnati, Ohio.  
Central of Georgia Railway Co., Savannah, Ga.  
Charlottesville Lumber Co., Inc., Charlottesville, Va.  
Chicago & Riverdale Lumber Co., Chicago, Ill.  
Cincinnati, City of, Department of Purchasing, Cincinnati, Ohio.  
Cincinnati Sash & Door Co., Cincinnati, Ohio.  
Coates, Henry T., & Associates, New York, N. Y.  
Conrad & Cummings, Associated Architects, Binghamton, N. Y.  
Cross, Austin & Ireland Lumber Co., Brooklyn, N. Y.

Curtis Cos., Inc., Clinton and Sioux City, Iowa; Chicago, Ill.; Wausau, Wis.; Lincoln, Nebr.; Topeka, Kans.; Minneapolis, Minn.  
Dakota Sash & Door Co., Aberdeen, S. Dak.  
Dayton Sash & Door Co., Dayton, Ohio.  
Deats Sash & Door Co., Los Angeles, Calif.  
DeJarnette, Charles W., Des Moines, Iowa (General support.)  
Delmarva Sash & Door Co., Philadelphia, Pa.  
Detroit, City of, City Engineer's Office, Detroit, Mich.  
Donlin Co., Inc., St. Cloud, Minn.  
Dykes Lumber Co., New York, N. Y.  
Edwards Sash Door & Lumber Co., Tampa, Fla.  
Estes Lumber Co., Birmingham, Ala.  
Farley & Loetscher Manufacturing Co., Dubuque, Iowa.  
Flannagan, Eric G., Henderson, N. C.  
Fort Wayne Builders' Supply Co., Fort Wayne, Ind.  
General Millwork Corp., Utica, N. Y.  
General Plywood Corp., Louisville, Ky.  
Gibson Door Co., Inc., Utica, N. Y.  
Goshen Sash & Door Co., Goshen, Ind.  
Green Lumber Co., Laurel, Miss.  
Greene & Wood, Inc., New Bedford, Mass.  
H & S Lumber Co., Charlotte, N. C.  
Hager & Cove Lumber Co., Lansing, Mich.  
Hallack & Howard Lumber Co., Denver, Colo.  
Harbor Plywood Corp. of California, San Francisco, Calif.  
Harbor Sales Co., Inc., Baltimore, Md.  
Harbor Sales Co., Washington, D. C.  
Hardwood Products Corp., Neenah, Wis.  
Hastings, A. W., & Co., Inc., Somerville, Mass.  
Hodgdon, Charles, San Gabriel, Calif.  
Houston-Ready-Cut House Co., Inc., Houston, Tex.  
Houston Sash & Door Co., Houston, Tex.  
Huttig Manufacturing Co., Muscatine, Iowa.  
Huttig Sash & Door Co., Roanoke, Va.  
Huttig Sash & Door Co., St. Louis, Mo.  
Indiana Lumber & Manufacturing Co., Inc., South Bend, Ind.  
Interstate Sash & Door Co., Canton, Ohio.  
Iron City Sash & Door Co., Pittsburgh, Pa.  
Jacksonville Sash & Door Co., Jacksonville, Fla.  
Johnson & Wimsatt, Inc., Washington, D. C.  
Keely, Hal, Plywood Co., Pittsburgh, Pa.  
Keely, S. S., & Sons, Philadelphia, Pa.  
Koehl, John W., & Son, Inc., Los Angeles, Calif.  
Latenser, John, & Sons, Omaha, Nebr.  
Law, Law, Potter & Nystrom, Madison, Wis.  
Loeb, Laurence M., White Plains, N. Y.  
Loetscher & Burch Manufacturing Co., Des Moines, Iowa.  
Los Angeles, City of, Bureau of Public Buildings, Los Angeles, Calif.  
Lumber & Millwork Co., of Philadelphia, Philadelphia, Pa.  
Lumbermen's Credit & Warehouse Co., Kalamazoo, Mich.  
M & M Wood Working Co., Portland, Oreg.  
Mahoney Sash & Door Co., Canton, Ohio.  
Markland, M. B., Contracting Co., Atlantic City, N. J.  
Martin, Edgar, Chicago, Ill.  
Martin Millwork Co., Raleigh, N. C.  
McPhillips Manufacturing Co., Inc., Mobile, Ala.  
Mengel Co., Louisville, Ky.  
Merritt Lumber Yard, Inc., Reading, Pa.  
Metropolitan Millwork Co., Brooklyn, N. Y.  
Michigan Wholesalers, Inc., Jackson, Mich.  
Miller & Vrydagh, Terre Haute, Ind.  
Milwaukee, City of, Bureau of Bridges & Buildings, Milwaukee, Wis.  
Minnesota Highway Department, St. Paul, Minn.  
Monsanto Chemical Co., Springfield, Mass.

Mooser, William, San Francisco, Calif.  
Morgan Co., Oshkosh, Wis.  
Morgan Millwork Co., Baltimore, Md.  
Morgan Sash & Door Co., Chicago, Ill.  
Morrison-Merrill & Co., Salt Lake City, Utah  
Muhlenberg Bros., Reading, Pa.  
Mutual Millwork Co., Orlando, Fla.  
National Manufacturing Co., Sterling, Ill.  
National Plywoods, Inc., Chicago, Ill.  
New Rochelle Coal & Lumber Co., New Rochelle, N. Y.  
Northern Sash & Door Co., Hawkins, Wis.  
Norwood Sash & Door Manufacturing Co., Norwood, Ohio  
Nurenburg, W. S., Fort Worth, Tex.  
Oklahoma Sash & Door Co., Oklahoma City, Okla.  
Pacific Manufacturing Co., Santa Clara, Calif.  
Paducah Sash & Door Co., Paducah, Ky.  
Paine Lumber Co., Ltd., Oshkosh, Wis.  
Patten-Blinn Lumber Co., Los Angeles, Calif.  
Pease Woodwork Co., Cincinnati, Ohio  
Pepper Associates, The, Philadelphia, Pa.  
Plywoods-Plastics Corp., Hampton, S. C.  
Radford & Sanders, Inc., Baltimore, Md.  
Radford & Sanders, Inc., Harrisburg, Pa.  
Ramsey, A. H., & Sons, Inc., Miami, Fla.  
Ready Hung Door Corp., Fort Worth, Tex.  
Ready Hung Door Manufacturing Corp. of Texas, Dallas, Tex.  
Resnikoff, Abraham, New York, N. Y.  
Roach & Musser Co., Muscatine, Iowa  
Rock Island Millwork Co., Rock Island, Ill.  
Rockwell Manufacturing Co., of Wisconsin, Randolph, Wis.  
Roddiss Plywood Corp., Marshfield, Wis.  
Rudinger, C. R., Inc., South Kearny, N. J.  
Sanders Bros. Manufacturing Co., Ottawa, Ill.  
Segelke & Kohlhaus Co., La Crosse, Wis.  
Seneca Lumber & Millwork Co., Fostoria, Ohio  
Shenk, Henry, Co., Erie, Pa.  
Silbernagel, Geo., & Sons Co., Wausau, Wis.

Smith, Allen A., Co., Toledo, Ohio  
Sothman Co., Grand Island, Nebr.  
Southern Pacific Co., San Francisco, Calif.  
Southwestern Sash & Door Co., Joplin, Mo.  
Standard Lumber & Supply Co., Fort Wayne, Ind.  
Staub & Rather, Houston, Tex.  
Stoetzel, Ralph, Chicago, Ill.  
Summers Hardware & Supply Co., Johnson City, Tenn.  
Sweetwater Sash & Door Co., Sweetwater, Tex.  
Taylor, Ellery Kirke, Haddonfield, N. J.  
Taylor Sash & Door Co., Pensacola, Fla.  
Teachout Sash, Door & Glass Co., Detroit, Mich.  
Texas Sash & Door Co., Fort Worth, Tex.  
Thorne, Henry Calder, Ithaca, N. Y.  
Throop-Martin Co., Columbus, Ohio  
Timberline, Inc., Kansas City, Mo.  
Trexler Lumber Co., Allentown, Pa.  
Tulane Hardwood Lumber Co., Inc., New Orleans, La.  
Tyson Mill & Builders Supply Co., Orlando, Fla.  
United States Plywood Corp., New York, N. Y.  
Vetter Manufacturing Co., Stevens Point, Wis.  
Wanke Panel Co., Portland, Ore.  
Warren Bros. Co., Nashville, Tenn.  
Washington Woodworking Co., Inc., Washington, D. C.  
Watertown Sash & Door Co., Watertown, S. Dak.  
Welch, Carroll E., Huntington, N. Y.  
Western Hardwood Lumber Co., Los Angeles, Calif.  
Whissel, L. N., Lumber Co., Inc., Buffalo, N. Y.  
Wolverine Shingle & Lumber Co., Detroit, Mich.  
Zimmerman, A. C., Los Angeles, Calif.

#### UNITED STATES GOVERNMENT

Agriculture, U. S. Department of, Division of Purchase, Sales and Traffic, Washington, D. C.  
Army, Department of the, Washington, D. C.  
Interior, U. S. Department of the, Bureau of Indian Affairs, Washington, D. C.

## COMMERCIAL STANDARDS

#### CS No.

0-40. Commercial standards and their value to business.  
1-42. Clinical thermometers.  
2-30. Mopsticks.  
3-40. Stoddard solvent.  
4-29. Staple porcelain (all-clay) plumbing fixtures.  
5-46. Pipe nipples; brass, copper, steel and wrought-iron.  
6-31. Wrought-iron pipe nipples. Superseded by CS5-46.  
7-29. Standard weight malleable iron or steel screwed unions.  
8-41. Gage blanks.  
9-33. Builders' template hardware.  
10-29. Brass pipe nipples. Superseded by CS5-46.  
11-41. Moisture regains of cotton yarns.  
12-48. Fuel oils.  
13-44. Dress patterns.  
14-51. Boys' sport and dress shirt (woven fabrics) size measurements.  
15-46. Men's pajama sizes (made from woven fabrics).  
16-29. Wallpaper.  
17-47. Diamond core drill fittings.  
18-29. Hickory golf shafts.  
19-32. Foundry patterns of wood.  
20-49. Vitreous china plumbing fixtures.  
21-39. Interchangeable ground-glass joints, stopcocks, and stoppers.  
22-40. Builders' hardware (nontemplate).  
23-30. Feldspar.  
24-43. Screw threads and tap-drill sizes.  
25-30. Special screw threads. Superseded by CS24-43.  
26-30. Aromatic red cedar closet lining.  
27-36. Mirrors.  
28-46. Cotton fabric tents, tarpaulins and covers.  
29-31. Staple seats for water-closet bowls.  
30-31. (Withdrawn.)  
31-38. Wood shingles.  
32-31. Cotton cloth for rubber and pyroxylin coating.  
33-43. Knit underwear (exclusive of rayon).

#### CS No.

34-31. Bag, case, and strap leather.  
35-49. Hardwood plywood.  
36-33. Fourdrinier wire cloth.  
37-31. Steel bone plates and screws.  
38-32. Hospital rubber sheeting.  
39-37. (Withdrawn.)  
40-32. Surgeons' rubber gloves.  
41-32. Surgeons' latex gloves.  
42-49. Structural fiber insulating board.  
43-32. Grading of sulphonated oils.  
44-32. Apple wraps.  
45-48. Douglas fir plywood.  
46-49. Hosiery lengths and sizes.  
47-34. Marking of gold-filled and rolled-gold-plate articles other than watchcases.  
48-40. Domestic burners for Pennsylvania anthracite (underfeed type).  
49-34. Chip board, laminated chip board, and miscellaneous boards for bookbinding purposes.  
50-34. Binders board for bookbinding and other purposes.  
51-35. Marking articles made of silver in combination with gold.  
52-35. Mohair pile fabrics (100-percent mohair plain velvet, 100-percent mohair plain frieze, and 50-percent mohair plain frieze).  
53-35. Colors and finishes for cast stone.  
54-35. Mattresses for hospitals.  
55-35. Mattresses for institutions.  
56-49. Oak flooring.  
57-40. Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings.  
58-36. Woven elastic fabrics for use in overalls (overall elastic webbing).  
59-44. Textiles—testing and reporting.  
60-48. Hardwood dimension lumber.  
61-37. Wood-slat venetian blinds.  
62-38. Colors for kitchen accessories.  
63-38. Colors for bathroom accessories.  
64-37. Walnut veneers.  
65-43. Methods of analysis and of reporting fiber composition of textile products.



## CS No.

- 66-38. Marking of articles made wholly or in part of platinum.
- 67-38. Marking articles made of karat gold.
- 68-38. Liquid hypochlorite disinfectant, deodorant, and germicide.
- 69-38. Pine oil disinfectant.
- 70-41. Phenolic disinfectant (emulsifying type) (published with CS71-41).
- 71-41. Phenolic disinfectant (soluble type) (published with CS70-41).
- 72-38. Household insecticide (liquid spray type).
- 73-48. Old growth Douglas fir, Sitka spruce, and Western hemlock standard stock doors.
- 74-39. Solid hardwood wall paneling.
- 75-42. Automatic mechanical draft oil burners designed for domestic installations.
- 76-39. Hardwood interior trim and molding.
- 77-48. Enameled cast-iron plumbing fixtures.
- 78-40. Ground-and-polished lenses for sun glasses (published with CS79-40).
- 79-40. Blown, drawn, and dropped lenses for sun glasses (published with CS78-40).
- 80-41. Electric direction signal systems other than semaphore type for commercial and other vehicles subject to special motor vehicle laws (after market).
- 81-41. Adverse-weather lamps for vehicles (after market).
- 82-41. Inner-controlled spotlamps for vehicles (after market).
- 83-41. Clearance, marker, and identification lamps for vehicles (after market).
- 84-41. Electric tail lamps for vehicles (after market).
- 85-41. Electric license-plate lamps for vehicles (after market).
- 86-41. Electric stop lamps for vehicles (after market).
- 87-41. Red electric warning lanterns.
- 88-41. Liquid burning flares.
- 89-40. Hardwood stair treads and risers.
- 90-49. Power cranes and shovels.
- 91-41. Factory-fitted Douglas fir entrance doors.
- 92-41. Cedar, cypress, and redwood tank stock lumber.
- 93-50. Portable electric drills (exclusive of high frequency).
- 94-41. Calking lead.
- 95-41. Lead pipe.
- 96-41. Lead traps and bends.
- 97-42. Electric supplementary driving and passing lamps for vehicles (after market).
- 98-42. Artists' oil paints.
- 99-42. Gas floor furnaces—gravity circulating type.
- 100-47. Porcelain-enameled steel utensils.
- 101-43. Flue-connected oil-burning space heaters equipped with vaporizing pot-type burners.
- 102- . (Reserved for "Diesel and fuel-oil engines".)
- 103-48. Rayon jacquard velour (with or without other decorative yarn).
- 104-49. Warm-air furnaces equipped with vaporizing-type oil burners.
- 105-48. Mineral wool insulation for low temperatures.
- 106-44. Boys' pajama sizes (woven fabrics).
- 107-45. (Withdrawn.)
- 108-43. Treading automobile and truck tires.
- 109-44. Solid-fuel-burning forced-air furnaces.
- 110-43. Tire repairs—vulcanized (passenger, truck, and bus tires).
- 111-43. Earthenware (vitreous-glazed) plumbing fixtures.
- 112-43. Homogeneous fiber wallboard.
- 113-51. Oil-burning floor furnaces equipped with vaporizing pot-type burners.
- 114-43. Hospital sheeting for mattress protection.
- 115-44. Porcelain-enameled tanks for domestic use.
- 116-44. Bituminized-fibre drain and sewer pipe.
- 117-49. Mineral wool insulation for heated industrial equipment.
- 118-44. Marking of jewelry and novelties of silver.
- (E) 119-45.<sup>1</sup> Dial indicators (for linear measurements).

## CS No.

- 120-48. Standard stock ponderosa pine doors.
- 121-45. Women's slip sizes (woven fabrics).
- 122-49. Western softwood plywood.
- 123-49. Grading of diamond powder.
- (E) 124-45.<sup>1</sup> Master disks.
- 125-47. Prefabricated homes.
- 126-45. Tank-mounted air compressors.
- 127-45. Self-contained mechanically refrigerated drinking water coolers.
- 128-49. Men's sport shirt sizes—woven fabrics (other than those marked with regular neckband sizes).
- 129-47. Materials for safety wearing apparel.
- 130-46. Color materials for art education in schools.
- 131-46. Industrial mineral wool products, all types—testing and reporting.
- 132-46. Hardware cloth.
- 133-46. Woven wire netting.
- 134-46. Cast aluminum cooking utensils (metal composition).
- 135-46. Men's shirt sizes (exclusive of work shirts).
- 136-46. Blankets for hospitals (wool, and wool and cotton.)
- 137-51. Size measurements for men's and boys' shorts (woven fabrics).
- 138-49. Insect wire screening.
- 139-47. Work gloves.
- 140-47. Testing and rating convectors.
- 141-47. Sine bars, blocks, plates, and fixtures.
- 142-47. Automotive lifts.
- 143-47. Standard strength and extra strength perforated clay pipe.
- 144-47. Formed metal porcelain enameled sanitary ware.
- 145-47. Testing and rating hand-fired hot water supply boilers.
- 146-47. Gowns for hospital patients.
- 147-47. Colors for molded urea plastics.
- 148-50. Men's circular flat-and-rib-knit rayon underwear.
- 149-48. Utility type house dress sizes.
- 150-48. Hot rolled rail steel bars (produced from Tee-section rails).
- 151-48. Body measurements for the sizing of apparel for infants, babies, toddlers, and children (for the knit underwear industry).
- 152-48. Copper naphthenate wood-preserved (spray, brush, dip application).
- 153-48. Body measurements for the sizing of apparel for girls (for the knit underwear industry).
- 154- . (Reserved for "Wire rope".)
- 155-50. Body measurements for the sizing of boys' apparel (knit underwear, shirts, trousers).
- 156-49. Colors for polystyrene plastics.
- 157-49. Ponderosa pine and sugar pine plywood.
- 158-49. Model forms for girls' apparel.
- 159-49. Sun glass lenses made of ground and polished plate glass, thereafter thermally curved.
- 160-49. Wood-fiber blanket insulation (for building construction).
- 161-49. "Standard grade" hot-dipped galvanized ware (coated after fabrication).
- 162-49. Tufted bedspreads.
- 163-49. Standard stock ponderosa pine windows, sash and screens.
- 164- . (Reserved for "Concrete mixers".)
- 165-50. Zinc naphthenate wood-preserved (spray, brush, dip application).
- 166-50. Size measurements for men's work trousers.
- 167-50. Automotive and general service copper tube.
- 168-50. Polystyrene plastic wall tiles, and adhesives for their application.
- 169-50. Galvanized ware fabricated from *pregalvanized* steel sheets.
- 170-50. Cotton flour-bag (sack) towels.
- 171-50. Hardwood veneered doors.
- 172-50. Brass trim for water-closet bowls, tanks, and urinals (dimensional standards).
- 173-50. Heavy-duty alpha cellulose-filled melamine tableware.

<sup>1</sup> Where "(E)" precedes the CS number, it indicates an emergency commercial standard, drafted under war conditions with a view toward early revision.

## U. S. DEPARTMENT OF COMMERCE

### Field Service

Albuquerque, N. Mex. 203 W. Gold Ave.	Memphis 3, Tenn. 229 Federal Bldg.
Atlanta 3, Ga. 50 Whitehall St. SW.	Miami 32, Fla. 36 NE. First St.
Baltimore 2, Md. 103 S. Gay St.	Milwaukee 2, Wis. 517 E. Wisconsin Ave.
Boston 9, Mass. 1800 Customhouse	Minneapolis 1, Minn. 401 Second Ave. South
Buffalo 3, N. Y. 117 Ellicott St.	Mobile 10, Ala. 109-13 St. Joseph St.
Butte, Mont. 14 W. Granite St.	New Orleans 12, La. 333 St. Charles Ave.
Charleston 3, S. C. 18 Broad St.	New York 4, N. Y. 42 Broadway
Cheyenne, Wyo. 206 Federal Office Bldg.	Oklahoma City 2, Okla. 102 NW. Third St.
Chicago 4, Ill. 332 S. Michigan Ave.	Omaha 2, Nebr. 1319 Farnam St.
Cincinnati 2, Ohio 105 W. Fourth St.	Philadelphia 7, Pa. 1015 Chestnut St.
Cleveland 14, Ohio 925 Euclid Ave.	Phoenix, Ariz. 234 N. Central Ave.
Dallas 2, Tex. 1114 Commerce St.	Pittsburgh 19, Pa. 700 Grant St.
Denver 2, Colo. 828 Seventeenth St.	Portland 4, Oreg. 520 SW. Morrison St.
Detroit 26, Mich. 230 W. Fort St.	Providence 3, R. I. 24 Weybossett St.
El Paso, Tex. 206 U. S. Courthouse Bldg.	Reno, Nev. 118 W. Second St.
Hartford 1, Conn. 135 High St.	Richmond 19, Va. 801 E. Broad St.
Houston 14, Tex. 602 Federal Office Bldg.	St. Louis 1, Mo. 1114 Market St.
Jacksonville 1, Fla. 311 W. Monroe St.	Salt Lake City 1, Utah 350 S. Main St.
Kansas City 6, Mo. 911 Walnut St.	San Francisco 11, Calif. 555 Battery St.
Los Angeles 12, Calif. 312 North Spring St.	Savannah, Ga. 125-29 Bull St.
Louisville 2, Ky. 631 Federal Bldg.	Seattle 4, Wash. 909 First Ave.

*For local telephone listing, consult section devoted  
to U. S. Government*